



**WEST BENGAL STATE UNIVERSITY**  
B.Sc. Honours 5th Semester Examination, 2020, held in 2021

**ZOOADSE01T-ZOOLOGY (DSE1/2)**

**ANIMAL BEHAVIOUR AND CHRONOBIOLOGY**

Time Allotted: 2 Hours

Full Marks: 40

*The figures in the margin indicate full marks.  
Candidates should answer in their own words and adhere to the word limit as practicable.  
All symbols are of usual significance.*

1. Answer any **eight** questions from the following: 2×8 = 16
- (a) Define altruism.
  - (b) What is *Ad Libitum* sampling and focal animal sampling?
  - (c) What do you understand by the term “cultural transmission”?
  - (d) Name two pioneer ethologists who won the Nobel Prize.
  - (e) Define FAP.
  - (f) What is innate behaviour?
  - (g) What is trophallaxis?
  - (h) What is male rivalry? State one example.
  - (i) What do you mean by primer and releaser pheromone?
  - (j) Name the different castes in a termite colony.
  - (k) What do you mean by “Events” and “States”?
  - (l) What is Chronobiology?
  - (m) Name the author of “*Handbook of the Birds of India and Pakistan*” and “*Survival Strategies-cooperation & conflict in animal societies*”.
  - (n) What is the social organization of pride in lion?
2. Answer any **three** questions from the following: 3×3 = 9
- (a) Define tidal and lunar rhythm with example.
  - (b) What is instinct? Explain it with a typical example.
  - (c) Define habituation. Give an example.
  - (d) What is inclusive fitness? Give example.
  - (e) Define waggle dance. Write its advantages.
  - (f) What do you mean by Fisherian runaway hypothesis?

3. Answer any *three* questions from the following: 5×3 = 15
- (a) Outline the evolutionary problem of eusociality briefly. 5
  - (b) What is imprinting? Explain this behaviour with an example. 2+3
  - (c) Discuss adaptive significance of biological clocks. Explain Bateman's Principle. 3+2
  - (d) Discuss the role of supra-chiasmatic nucleus in maintenance of Circadian rhythm with diagram. Give example of Circadian rhythm one each from human and invertebrate animals. 3+2
  - (e) Explain the Hamilton's rule to explain altruism in social hymenopterans. 5
  - (f) Discuss about photoperiodic regulation of reproduction in vertebrates. 5

**N.B. :** *Students have to complete submission of their Answer Scripts through E-mail / Whatsapp to their own respective colleges on the same day / date of examination within 1 hour after end of exam. University / College authorities will not be held responsible for wrong submission (at in proper address). Students are strongly advised not to submit multiple copies of the same answer script.*

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